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FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			EXAMINER KARLS, SHAY LYNN	
			ART UNIT	PAPER NUMBER

1744

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,364

Applicant(s)

RUKAVINA ET AL.

Examiner

Shay L. Karls

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1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 5-18 and 26-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 19-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 3/15/04, 9/27/06.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Election/Restrictions***

Claims 5-18, 26-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/27/06. It is noted that in the restriction the Examiner stated that claims 1-18 were generic however after further consideration of the claims, it is noted that only claims 1-4 are generic. Claims 5-18 are directed toward non-elected figure 4 where the shaft and armature are stationary and the motor and the magnets rotate (paragraph 0037). The applicant elected figure 13 (claims 19-25) where the shaft and armature rotate and the magnets and motor are stationary (paragraph 0053). Therefore, claims 1-4 and 19-25 are being examined in this application.

***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 10 (page 6 paragraph 0032). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the rear portion" in line 6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-2 and 4 rejected under 35 U.S.C. 102(e) as being anticipated by Cipolla et al. (PGPub 2004/0134019).**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

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inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Cipolla teaches an upright cleaning device comprising an actuator (42) for receiving a users input. There is an upper assembly (20) to which the actuator is mounted. There is a base assembly (12) wherein the upper assembly is pivotally mounted to the base assembly (abstract, lines 1-3). There is a rear wheel (24), mounted to the base assembly configured to support the rear portion of the base. There is a drive mechanism (25) located in the base having its major diameter in contact with a surface to be cleaned (figure 7 shows the drive mechanism contacting a surface). The operator manipulates the actuator to control the speed and direction of rotation of the drive mechanism (paragraph 0028).

With regards to claim 2, there is a handle (22) slidably mounted to an upper portion of the upper assembly (paragraph 0024 and figure 1). There is a first and second spaced apart magnets (174, 176) fixedly mounted to the handle on an axis parallel to the longitudinal axis of the handle. There is a Hall-effect sensor (170) fixedly mounted in the upper portion of the upper assembly such that the sensor is positioned: approximately midway between the first and second magnets when no user input is applied to the handle, in close proximity to the second magnet when a forward input force is applied by the user, and in close proximity to the first magnet when an opposite input force is applied by the user (paragraph 0027).

With regards to claim 4, there is a controller (74) which selectively powers the drive assembly inducing one of a constant speed forward rotational motion and a constant speed backward rotational motion according to the an excitation voltage produced by the Hall-effect sensor (paragraph 0027).

**Claims 1-2 and 4 rejected under 35 U.S.C. 102(e) as being anticipated by Conner et al. (USPN 7043794).**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Conner et al. teaches an upright cleaning device comprising an actuator (42) for receiving a users input. There is an upper assembly (20) to which the actuator is mounted. There is a base assembly (12) wherein the upper assembly is pivotally mounted to the base assembly (abstract, lines 1-3). There is a rear wheel (24), mounted to the base assembly configured to support the rear portion of the base. There is a drive mechanism (figure 6 and 7) located in the base having its major diameter in contact with a surface to be cleaned. The operator manipulates the actuator to control the speed and direction of rotation of the drive mechanism (col. 8, lines 43-45).

With regards to claim 2, there is a handle (40, 68) slidably mounted to an upper portion of the upper assembly (col. 4, lines 43-46). There is a first and second spaced apart magnets (174, 176) fixedly mounted to the handle on an axis parallel to the longitudinal axis of the handle. There is a Hall-effect sensor (170) fixedly mounted in the upper portion of the upper assembly such that the sensor is positioned: approximately midway between the first and second magnets when no user input is applied to the handle, in close proximity to the second magnet

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when a forward input force is applied by the user, and in close proximity to the first magnet when an opposite input force is applied by the user (col. 6, lines 26-49).

With regards to claim 4, there is a controller (104) which selectively powers the drive assembly inducing one of a constant speed forward rotational motion and a constant speed backward rotational motion according to the an excitation voltage produced by the Hall-effect sensor (col. 4, lines 61-67, col. 5, lines 1-9).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conner et al. ('794) or Cipolla et al. ('019).**

Conner or Cipolla teach all the essential elements of the claimed invention however fail to teach that the Hall-effect sensor produces an excitation voltage of 2 to 3 VDC when no user input is applied to the handle structure, an excitation voltage of 1 to 2 VDC when a first input

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force is applied by the user and an excitation voltage of 3 to 4 VDC when a second input force is applied by the user. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Conner or Cipolla so that the voltages of the Hall-sensor vary as described in the claim when in different modes of use. While Conner or Cipolla do not discuss particular voltages for the various input forces applied by the user, one of skill in the art would by routine experimentation find the optimum voltages for the various modes of the cleaner. It would have been obvious to one of skill in the art to make the voltages of Conner or Cipolla any amount so desired or required, including as claimed to optimize the performance of the cleaner.

**Claims 19, 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conner et al. ('794) in view of Rivin et al. (USPN 6003193).**

With regards to claim 19, Conner teaches a self-propelled upright cleaning device comprising a nozzle base (12), an upper housing (20) pivotally mounted to the base (abstract, lines 1-3). There is a handle actuator (40, 42, 68) for receiving user input. The handle is mounted on the upper housing section. There is a drive mechanism (figure 6 and 7) located in the base having its major diameter in contact with a surface to be cleaned. The drive mechanism comprises a rotating motor shaft (236) and a stationary motor housing (26) encircling a portion of the rotating shaft. There is a sun gear (234) mounted on the end of the motor shaft. There is a planetary gear train (242, 248, 252) with one planet gear (242) engaging the sun gear. There is a ring gear (246) engaging at least one of the planet gears (242) and the ring gear is indirectly connected to a sleeve (306, 312) comprising a driving surface (30) of the drive mechanism.

With regards to claim 23, the sun gear is connected to the motor shaft (col. 9, lines 50, 52).



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With regards to claim 24, there are three spaced planet gears which all indirectly engage the sun gear. A first gear (242) directly engages the sun gear, a second gear (248) indirectly engages the sun gear by means of the ring gear (246) and first gear (242). A third gear (252) also indirectly contacts the sun gear by means of the second gear (258), the ring gear (246) and the first gear (242).

Conner teaches all the essential elements of the claimed invention however fails to teach a rotating armature mounted on the shaft (claim 19). Rivin teaches an electric motor with a rotating motor shaft (59), a rotating armature (57) and a stationary motor housing (53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Conner's motor with the motor as taught by Rivin since they are equivalent structures known in the art. Both Conner and Rivin teach using the motor as a driving mechanism. Therefore, because these two electric motors were art-recognized equivalents at the time of the invention was made, one of ordinary skill in the art would have found it obvious to substitute the motor of Rivin for the motor of Conner.

**Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conner et al. ('794) in view of Rivin et al. ('193) as applied to claim 19 above and further in view of Koski (USPN 6836386).**

Conner teaches all the essential elements of the claimed invention as stated above however fails to teach a plurality of Hall-effect sensors mounted on the armature. Rivin teaches a motor with stationary permanent magnets (55). It is known in the art of electric motors that magnets are used for position sensors. Rivin however fails to explicitly disclose the use of the magnets. Koski teaches an electric motor with a plurality of magnets (79) and Hall-effect

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sensors (75-77). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rivin's electric motor with Hall-effect sensors as taught by Koski so that the sensor could interact with the existing magnets and sense the motor armature position and select the proper motor winding that is to be excited (col. 3, lines 59-65).

**Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conner et al. ('794) in view of Rivin et al. ('193) as applied to claim 19 above.**

Conner and Rivin teach all the essential elements of the claimed invention including that a wheel tread (30) that is mounted on the sleeve (306; figure 6) however fail to teach that the wheel tread is concentrically located with respect to the motor shaft. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to space the wheel tread so that it is concentric with the motor shaft because Applicant has not disclosed that the concentrically spaced shaft and wheel tread provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the spacing as taught by Conner or the claimed concentric spacing because both spacing perform the same function of propelling the cleaning device equally well. Therefore, it would have been obvious to one of ordinary skill in the art to modify Conner to obtain the invention as specified in claim 21.

**Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conner et al. ('794) in view of Rivin et al. ('193) as applied to claim 19 above.**

Conner and Rivin teach all the essential elements of the claimed invention however fail to teach that the ring gear is of one piece with the sleeve. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the ring gear so that is one-

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piece with the sleeve (306) since making parts integral is a modification that has been considered to be within the level of ordinary skill in the art. *In re Larson* 144 USPQ 347, 349).

**Claims 19, 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cipolla et al. ('019) in view of Rivin et al. (USPN 6003193).**

With regards to claim 19, Cipolla teaches a self-propelled upright cleaning device comprising a nozzle base (12), an upper housing (20) pivotally mounted to the base (abstract, lines 1-3). There is a handle actuator (22, 42) for receiving user input. The handle is mounted on the upper housing section. There is a drive mechanism (25) located in the base having its major diameter in contact with a surface to be cleaned. The drive mechanism comprises a rotating motor shaft (236) and a stationary motor housing (26) encircling a portion of the rotating shaft. There is a sun gear (234) mounted on the end of the motor shaft. There is a planetary gear train (242, 248, 252) with one planet gear (242) engaging the sun gear. There is a ring gear (246) engaging at least one of the planet gears (242) and the ring gear is indirectly connected to a sleeve (306, 312) comprising a driving surface (30) of the drive mechanism.

With regards to claim 23, the sun gear is connected to the motor shaft (paragraph 0029).

With regards to claim 24, there are three spaced planet gears which all indirectly engage the sun gear. A first gear (242) directly engages the sun gear, a second gear (248) indirectly engages the sun gear by means of the ring gear (246) and first gear (242). A third gear (252) also indirectly contacts the sun gear by means of the second gear (258), the ring gear (246) and the first gear (242).

Cipolla teaches all the essential elements of the claimed invention however fails to teach a rotating armature mounted on the shaft (claim 19). Rivin teaches an electric motor with a

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rotating motor shaft (59), a rotating armature (57) and a stationary motor housing (53). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cipolla's motor with the motor as taught by Rivin since they are equivalent structures known in the art. Both Cipolla and Rivin teach using the motor as a driving mechanism. Therefore, because these two electric motors were art-recognized equivalents at the time of the invention was made, one of ordinary skill in the art would have found it obvious to substitute the motor of Rivin for the motor of Cipolla.

**Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cipolla et al. ('019) in view of Rivin et al. ('193) as applied to claim 19 above and further in view of Koski (USPN 6836386).**

Cipolla teaches all the essential elements of the claimed invention as stated above however fails to teach a plurality of Hall-effect sensors mounted on the armature. Rivin teaches a motor with stationary permanent magnets (55). It is known in the art of electric motors that magnets are used for position sensors. Rivin however fails to explicitly disclose the use of the magnets. Koski teaches an electric motor with a plurality of magnets (79) and Hall-effect sensors (75-77). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Rivin's electric motor with Hall-effect sensors as taught by Koski so that the sensor could interact with the existing magnets and sense the motor armature position and select the proper motor winding that is to be excited (col. 3, lines 59-65).

**Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cipolla et al. ('019) in view of Rivin et al. ('193) as applied to claim 19 above.**

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Cipolla and Rivin teach all the essential elements of the claimed invention including that a wheel tread (30) that is mounted on the sleeve (306; figure 6) however fail to teach that the wheel tread is concentrically located with respect to the motor shaft. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to space the wheel tread so that it is concentric with the motor shaft because Applicant has not disclosed that the concentrically spaced shaft and wheel tread provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the spacing as taught by Cipolla or the claimed concentric spacing because both spacing perform the same function of propelling the cleaning device equally well. Therefore, it would have been obvious to one of ordinary skill in the art to modify Cipolla to obtain the invention as specified in claim 21.

**Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cipolla et al. ('019) in view of Rivin et al. ('193) as applied to claim 19 above.**

Cipolla and Rivin teach all the essential elements of the claimed invention however fail to teach that the ring gear is of one piece with the sleeve. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the ring gear so that is one-piece with the sleeve (306) since making parts integral is a modification that has been considered to be within the level of ordinary skill in the art. *In re Larson* 144 USPQ 347, 349).

**Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Syverson et al. (USPN 6848147) in view of Conner et al. ('794) or Cipolla et al. ('019).**

'147 teaches a drive mechanism located in a base assembly configured to operate at one of full speed in one direction, no speed and full speed in the opposite direction (claim 3 of '147:

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magnet frame, motor assembly, dowel; claim 8: magnetic assembly, rotor; claim 15: magnet, armature; claim 18: magnet yoke, magnet rotor). '147 also teaches a controller for powering the drive assembly in a forward motion or a backward motion ('147 claims 3, 11, 15, 19) (claim 4 of the present invention). '147 fails to teach an actuator, an upper assembly pivotally mounted to the base assembly and a rear wheel mounted to the base (claim 1 of the present invention), wherein the actuator comprises a handle slidably mounted to an upper portion of the upper assembly and a Hall-effect sensor positioned between two magnets on the handle assembly (claim 2 of the present invention). Conner or Cipolla teach a cleaning device with all the elements as stated above (actuator, upper assembly, rear wheel, hall-effect sensor and magnets). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cleaning device of '147 with the cleaning device of Conner or Cipolla so that the cleaning devices of Conner or Cipolla comprise the drive mechanism of '147. The cleaning devices are equivalent structures known in the art and by using the cleaner of Conner or Cipolla with the drive mechanism of '147, the cleaning device would be self-propelled by a user.

Regarding claim 3, '147 in view of Conner or Cipolla teach all the essential elements of the claimed invention however fail to teach that the Hall-effect sensor produces an excitation voltage of 2 to 3 VDC when no user input is applied to the handle structure, an excitation voltage of 1 to 2 VDC when a first input force is applied by the user and an excitation voltage of 3 to 4 VDC when a second input force is applied by the user. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '147 in view of Conner or Cipolla so that the voltages of the Hall-sensor vary as described in the claim when in different modes of use. While '147 in view of Conner or Cipolla do not discuss particular voltages for the

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various input forces applied by the user, one of skill in the art would by routine experimentation find the optimum voltages for the various modes of the cleaner. It would have been obvious to one of skill in the art to make the voltages of '147 in view of Conner or Cipolla any amount so desired or required, including as claimed to optimize the performance of the cleaner.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-4 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3, 8, 11, 15, 18-19 and 21 of U.S. Patent No. 6848147 in view of Conner et al. ('794) or Cipolla et al. ('019). '147 teaches a drive mechanism located in a base assembly configured to operate at one of full speed in one direction, no speed and full speed in the opposite direction (claim 3 of '147: magnet frame, motor assembly, dowel; claim 8: magnetic assembly, rotor; claim 15: magnet, armature; claim 18: magnet yoke, magnet rotor). '147 also teaches a controller for powering the drive assembly in a**

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forward motion or a backward motion ('147 claims 3, 11, 15, 19) (claim 4 of the present invention). '147 fails to teach an actuator, an upper assembly pivotally mounted to the base assembly and a rear wheel mounted to the base (claim 1 of the present invention), wherein the actuator comprises a handle slidably mounted to an upper portion of the upper assembly and a Hall-effect sensor positioned between two magnets on the handle assembly (claim 2 of the present invention). Conner or Cipolla teach a cleaning device with all the elements as stated above (actuator, upper assembly, rear wheel, hall-effect sensor and magnets). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cleaning device of '147 with the cleaning device of Conner or Cipolla so that the cleaning devices of Conner or Cipolla comprise the drive mechanism of '147. The cleaning devices are equivalent structures known in the art and by using the cleaner of Conner or Cipolla with the drive mechanism of '147, the cleaning device would be self-propelled by a user.

Regarding claim 3, '147 in view of Conner or Cipolla teach all the essential elements of the claimed invention however fail to teach that the Hall-effect sensor produces an excitation voltage of 2 to 3 VDC when no user input is applied to the handle structure, an excitation voltage of 1 to 2 VDC when a first input force is applied by the user and an excitation voltage of 3 to 4 VDC when a second input force is applied by the user. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '147 in view of Conner or Cipolla so that the voltages of the Hall-sensor vary as described in the claim when in different modes of use. While '147 in view of Conner or Cipolla do not discuss particular voltages for the various input forces applied by the user, one of skill in the art would by routine experimentation find the optimum voltages for the various modes of the cleaner. It would have been obvious to



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one of skill in the art to make the voltages of '147 in view of Conner or Cipolla any amount so desired or required, including as claimed to optimize the performance of the cleaner.

***Allowable Subject Matter***

Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 22 states that there are first and second bearings mounted on the motor shaft wherein the bearing support the ends of the sleeve. If Conner or Cipolla were modified to include bearings on the motor shaft the bearings would not support the ends of the sleeve. The bearings would be located in the motor housing and since motor is not located within the sleeve, the bearings would not be capable of supporting the sleeve.

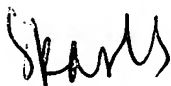
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L. Karls whose telephone number is 571-272-1268. The examiner can normally be reached on 7:00-4:30 M-Th, alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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A handwritten signature in black ink, appearing to read 'Slk'.

Slk  
12/1/06